THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES NOVITSKY

Appeal No. 1997-1619
Application 08/278,154

ON BRIEF

Before WINTERS, DOWNEY and WILLIAM F. SMITH, Administrative Patent Judges.

DOWNEY, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 6-9 and 42. Claims 10, 11, and 41 stand allowed.[1]

[1] Claims 1-5, 12-40, and 43 have been canceled.

Claim 6, the only independent claim, is illustrative of the subject matter on appeal and reads as follows:

> 6. A method for preparing an article of manufacture said article comprising at least one chamber enclosed by a solid, air-tight, encapsulating material, (A) the pressure inside the at least one chamber having a vacuum characteristic of being less than atmospheric pressure and (B) the encapsulating material of sufficient strength to maintain the integrity and the vacuum characteristic of the at least one chamber the method comprising:
>
> (1) contacting, in an environment of less than atmospheric pressure, (a) the surface of a preformed article that is porous to gases with (b) an encapsulation of a liquid material that solidifies into an air-tight, encapsulating material and
>
> (2) in the same environment of less than atmospheric pressure as in step (1), solidifying the liquid material to form thereby an air-tight, encapsulated article.

The reference relied upon by the examiner is:

Deschamps et al. (Deschamps)	3,769,770	November 6, 1973

Prior Art Rejection

A Claims 6-9 and 42 stand rejected under 35 U.S.C. § 103, with the examiner relying upon Deschamps as evidence of obviousness. We reverse.

Claims at Issue

B. Claim 6, representative of the claims on appeal, is directed to a method for preparing an article of manufacture,

> 1. comprising the steps of –
>
> a. in an environment of less than atmospheric pressure, contacting the

surface of a preformed article which is porous to gases with an encapsulation of a liquid material that solidifies into an air-tight, encapsulating material, and

b. in the same environment of less than atmospheric pressure as in step (a), solidifying the liquid material to form thereby an air-tight, encapsulated article;

2. wherein the article comprises at least one chamber enclosed by a solid, air-tight, encapsulating material, in which

a. the pressure inside of the at least one chamber has a vacuum characteristic of being less than atmospheric pressure, and

b. the encapsulating material has sufficient strength to maintain the integrity and vacuum characteristic of the at least one chamber.

C. Claims 7-9 and 42, also on appeal, depend from claim 6.

Prior art cited by the examiner as evidence of obviousness

D. The examiner relies upon Deschamps as the sole reference. Deschamps teaches:

1. A method for preparing an article of manufacture comprising the steps of

a. in an environment of less than atmospheric pressure, i.e., vacuum deposition, contacting the surface of a preformed article which is porous to gases with an encapsulating material (column 3, lines

24-43; column 5, lines 28-45); The encapsulating material is described as a highly reflective low emissivity material which is resistant to deterioration at high temperatures of 1000EF. Nickel, rhodium, tantalum, rhenium and cobalt are representative of this material.

b. in the same environment of less than atmospheric pressure as in step (a), solidifying the material to form thereby an encapsulated article (column 4, lines 13-16; column 5, lines 41-44);

2. wherein the article comprises at least one chamber enclosed by a solid, encapsulating material, i.e., continuous layer, in which

a. the pressure inside of the at least one chamber has a vacuum characteristic of being less than atmospheric pressure (column 2, lines 7-10, 16-30, and 63-68; column 3, lines 1-13; column 4, lines 3-10; column 5, lines 37-53);

b. the encapsulating material has sufficient strength to remain on the at least one chamber (column 3, lines 25-43).

E. There are differences between the teachings of Deschamps and the presently

claimed invention.

1. Deschamps does not teach that the surface of the preformed article is contacted with an encapsulation of a liquid material in an environment of less than atmospheric pressure.

2. Deschamps does not teach that the encapsulation material, when solidified, has sufficient strength to maintain the integrity and vacuum characteristic of the at least one chamber. Instead, Deschamps teaches the addition of a continuous, reflective layer (column 3, lines 24-43; column 5, line 54, through column 6, line 3).

F. The examiner accounts for the differences between Deschamps and the presently claimed invention.

1. The examiner acknowledges that Deschamps does not teach that the surface of the article is encapsulated with a liquid material, but he argues that "one of ordinary skill in the art would have recognized that the coating material used in the processes described by this reference would have at least existed in a liquid state at some point during the formation of continuous layer 17 described in column 3."[2]

[2] October 11, 1996 Examiner's Answer, paragraph bridging pp. 3 and 4.

2. With respect to the claim requirement that the encapsulating material has sufficient strength to maintain the integrity and vacuum characteristic of the at least one chamber, the examiner urges –

a. The encapsulating material in Deschamps "is air-tight since the reference discloses the desirability of creating a vacuum condition within the interior space of the chamber to lower thermal conductivity (column 3, lines 10-13)."[3]

b. Deschamps teaches the capture of a vacuum within the article "since column 3, lines 10-43 teaches that (1) the interior space of the article can be evacuated to lower thermal conductivity, (2) the interior space may be of a porous nature and (3) a desirable method of applying a continuous coating is by vacuum deposition."[4]

Opinion

We reverse the rejection of claims 6-9 and 42 under 35 U.S.C. § 103 as unpatentable over Deschamps. The examiner has not met his burden of showing that the claimed invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made. See In re Dembiczak, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1618 (Fed. Cir. 1999). In particular, the evidence presented by the

[3] Id.
[4] Id., at p. 5, para. 1.

examiner fails to meet two limitations recited in claim 6, namely, (1) that the surface of the preformed article is contacted with an encapsulation of a liquid material in an environment of less than atmospheric pressure and (2) that the encapsulation material, when solidified, has sufficient strength to maintain the integrity and vacuum characteristic of the at least one chamber.

As to the first limitation, the examiner alleges that "one of ordinary skill in the art would have recognized that the coating material used in the processes described by (Deschamps) would have at least existed in a liquid state at some point during the formation of continuous layer".[5] Such allegation is unsupported.

As noted earlier, Deschamps employs highly reflective metals, i.e., Ni, Rh, Ta, Re and Co, as his coating material. These materials normally exist as solids and the examiner has provided no evidence that "vacuum deposition" of these solids involves contacting the article with a liquid material. In fact, the examiner also has tendered no evidence that any of the film deposition processes taught by Deschamps at column 3, lines 35-43, involves both sub-atmospheric pressure and a liquid material.

As to the second of these limitations, the examiner attempts to meet that limitation by drawing an inference from the teachings in Deschamps as to a continuous layer on the sphere or fiber and evacuated spaces within the sphere or fiber. We cannot adopt the examiner's inference because the examiner has neither cited any direct teaching in

[5] Id., paragraph bridging pp. 3 and 4.

Deschamps as to this claim limitation nor established a cogent nexus between the formation of a reflective layer and a vacuum seal. The reference teaches that the vacuum spaces within the sphere or fiber are created when the sphere or fiber is formed (column 3, lines 10-13; column 5, lines 35-40) and the continuous layer is added thereafter as a reflective layer (column 3, lines 24-28; column 5, line 54, through column 6, line 3). A vacuum may be created in the interstitial spaces between the spheres or fibers after the continuous reflective layer is added to the spheres or fibers (column 4, lines 3-16; column 5, lines 45-54). The reflective layer is a thin film on the order of 1 to 5 microns thick (column 2, lines 10-15; column 3, lines 35-50; column 4, lines 38-40).

By contrast, the presently claimed method calls for the solidification of the liquid material to form an air-tight, encapsulated article. The vacuum is maintained in the chamber when the encapsulating material solidifies. The encapsulating material is of sufficient strength to maintain the integrity and vacuum characteristics of the chamber. Examples IV, V, VII, and IX in the present specification disclose encapsulating materials on the order of 1/16 inch thick, i.e., about 1600 microns.

Thus, on this record, the examiner has provided no basis for concluding that the reflective layer taught by Deschamps would have sufficient strength to maintain the integrity and vacuum characteristic of the at least one chamber.

Accordingly, we reverse the rejection of claims 6-9 and 42 under 35 U.S.C. § 103 as unpatentable over Deschamps.

REVERSED

SHERMAN D. WINTERS Administrative Patent Judge	))))) BOARD OF PATENT
MARY F. DOWNEY Administrative Patent Judge	)) APPEALS AND)) INTERFERENCES
WILLIAM F. SMITH Administrative Patent Judge	))

Archie W. Umphlett
Roper & Quigg
Three Crystal Park
2231 Crystal Park Drive, Suite 410
Arlington, VA 22202